

REMARKS

The pending Office Action addresses claims 21-36, rejecting all the claims. By this response, Applicant amends independent claims 21 and 33 to clarify their claim language. No change in scope of the claims is intended by these amendments. Support for these amendments can be found at page 3, lines 9-18 of the specification. Accordingly, no new matter is added.

In view of the remarks below, Applicants respectfully request reconsideration of the application. A Request for Continued Examination is submitted herewith.

Double Patenting Rejections

The Examiner rejects claims 21-36 under an obviousness-type double patenting rejection as being unpatentable over claims 1-41 of U.S. Patent No. 6,325,769. The Examiner also rejects claims 21-36 under an obviousness-type double patenting rejection as being unpatentable over claims 1-18 of U.S. Patent No. 6,113,559. Applicant will file a timely terminal disclaimer to overcome these rejections, once the Examiner indicates that claims 21-36 are allowable.

Prior Art Rejections

The present invention concerns the use of particular forms of *ultrasound* to reduce wrinkles.

The Examiner rejects claims 21-24, 27-29 and 31-35 under 35 U.S.C. §102(e) as being anticipated by Knowlton (U.S. Patent No. 6,387,380). Claims 25 and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over Knowlton, in view of Hutchinson et al. (U.S. Patent No. 6,135,971), while claims 30 and 36 are rejected as being unpatentable over Knowlton, in view of Lele (U.S. Patent No. 4,938,217). For all of the following reasons, Applicant respectfully disagrees and requests withdrawal of all the prior art rejections.

Each of the Examiner's rejections relies solely, or in part, on the Knowlton reference. However, the Knowlton reference does not anticipate, nor substantially disclose, the claimed invention. Knowlton is concerned with the use of heat to reduce wrinkles. Knowlton discloses radio frequency waves, light energy and ultrasound as potential heat sources.

In Applicant's previous response, each of the independent claims was amended to recite that an amount of ultrasound energy is introduced *at sufficiently high pressure amplitudes to propagate the ultrasound energy non-linearly* into a dermis layer of the target area. Likewise, claim 33 requires a control device constructed and arranged to control the transducer and induce ultrasound energy *at sufficiently high pressure amplitudes so as to cause non-linear propagation of the energy* into the dermis layer sufficient to induce new connective tissue formation. None of these limitations are found in the Knowlton reference.

In the Office Action of August 20, 2004, the Examiner dismisses this distinction on page 2, stating:

[I]t is inherent that ultrasound propagates through tissue non-linearly.

Applicant respectfully disagrees. Ultrasound waves normal propagates at the speed of sound. Applicant's ability to induce nonlinear propagation (and use it to advantage) is, in fact, an essential feature of the invention claimed in this application.

The Examiner's attention is directed to page 3, lines 9-24:

In a further aspect of the invention, the acoustic pulses which are used to treat the skin have pressure amplitudes that are sufficiently high to introduce non-linearity, that is to say, the speed of propagation of the pulses through the target region of dermis will be higher than the normal speed of sound propagation through skin. For example, in skin, the normal speed of sound is approximately 1480 m/sec. However, at high enough amplitudes, skin tissue becomes more elastic and the speed of propagation can increase to as high as about 1500 m/sec. The magnitude of this non-linear behavior varies not only with pulse amplitude, but also with the duration of the pulse. Typically, the non-linear behavior will be exhibited, with acoustic pulses having intensity (within the target region) of about 500 to about 1000 watts/cm² and is preferably applied by pulses having durations ranging from about 10 nanoseconds to about 200 microseconds.

One result of this non-linearity is distortion the waveform of the pulses and they travel through the skin, converting waves typically having Gaussian amplitude (pressure) profile to waves that presents a much sharper leading face, essentially a "shock-wave" at the target region below the surface of the skin. In a normal wave propagation mode, there is essentially no net movement of dermal material. However, when acoustic waves exhibit non-linearity, material does move, creating a negative pressure, or vacuum effect, in the tissue in the wake of the pulse.

If the Examiner would like further evidence that ultrasound does not inherently propagate in a non-linear manner, Applicant would be happy to submit an expanded explanation via a Rule 132 Declaration.

Because Knowlton fails to disclose the propagation of ultrasound energy in a *non-linear fashion*, as required of the claims, the reference cannot be said to anticipate the claimed invention. Withdrawal of the prior art rejections is requested.

A request for a two month extension of time up to and including January 21, 2005, to reply to the outstanding Office Action and a check for the extension fee are submitted herewith. Please note this response is timely because January 20, 2005 was a federal holiday (Inauguration Day).

Conclusion

In view of the above, each of the presently pending claims in this application is now believed to be in condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If further evidence by declaration is desired, the Examiner is urged to call the undersigned at the number indicated below. Likewise, if the only remaining issue is the need for Terminal Disclaimers, please call so that the filing of such disclaimers can be expedited.

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Respectfully submitted,

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